

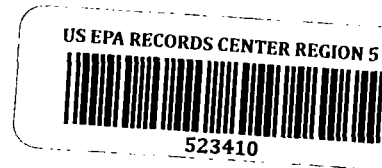
1023 Business Park Drive  
P.O. Box 2127  
Traverse City, MI 49685-2127  
616 941-2025

FEB 24 2000



► Environmental Solutions, Inc.

February 21, 2000



Mr. Scott Ross  
Waste Management Division  
Chief of Groundwater Permits  
Michigan Department of Environmental Quality  
PO Box 30241  
Lansing, Michigan 48909

RE: Application for Exemption Status, Rule 2210(y) for  
Williamsburg Receiving and Storage, 10190 Munro Road, Whitewater Township,  
Williamsburg, Michigan

Dear Mr. Ross:

Enclosed are two copies of an application for Williamsburg Receiving and Storage for an exemption according to Rule 323.2210(y) of the Michigan Natural Resources and Environmental Protection Act of 1994, PA 451 as amended. The rule states that "A person may discharge the following without a permit that would otherwise be required by part 31 if the discharge meets the requirements of Rule 323.2204:...(y) A discharge that has been determined by the Department to have an insignificant potential to be injurious based on volume and constituents. In making the determination the Department shall follow the public notice and comment procedures of Rule 323.2117 and Rule 323.2119. The department may establish criteria, limitations, or conditions applicable to the discharge to ensure that it meets the terms of this subdivision."

Through this letter, we will provide a summary of the process under consideration for exemption and will provide a demonstration to support applicability of the exemption to the process described.

### **Process Description**

Williamsburg Receiving and Storage currently processes cherries during the cherry harvesting season, stores these cherries in brine solution, and ships the cherries to customers for further processing and use. They do not discharge any brine; all brine is utilized for shipping cherries from the facility. Approximately twenty percent of the brine utilized for shipment must be made in addition to what has been utilized for storage of the cherries.

The facility has recently renewed wastewater permit number MI 0044741, which allows the discharge of cooling water during harvesting season. This water is in contact with the fresh cherries only, and a maximum of 1.3 million gallons per day is discharged from the facility to Tobeco swamp between June and August.

The facility is currently installing equipment to allow the capability of removing the pits and stems from the cherries. A schematic of the process is included in the application. The cherries are pumped from brine storage through a food pump and food grade lines to the dump tank. The cherries are then pumped through an initial misting stage at the debrining eliminator. Residual brine is removed at this stage from the cherries. The initial stage will utilize approximately three gallons of water per minute. Water discharged from this process will be recycled to brine storage. The cherries are then sent through a destemmer and six pitters. The process at Williamsburg Receiving and Storage does not require water for transport; the process prefers as little water as possible as transport is conducted via conveyor. At each of these stages, a maximum of five gallons per minute is utilized, bringing total maximum usage pitting and discharge stages to 35 gallons per minute. This flow will be recycled through the pitters to the extent practicable. A maximum operating schedule is anticipated to be 20 hours per day, and the amount of discharge from the facility would be a maximum of 42,000 gallons per day. The facility is proposed to operate year round, seven days a week.

### **Proposed Discharge**

The facility is in the process of constructing a lined pond with a holding capacity of 1.5 million gallons. The effluent will be utilized for irrigating cherry fields on the applicant's property as well as cherry farms on adjacent properties (refer to Site Map 2 in application). The total acreage for groundwater application is approximately eighty acres. Application at the effluent will be through aerial spray and trickle irrigation. This application will be rotated as necessary to ensure crop and land stability. Visual inspections of the irrigations will be made prior to, during and after irrigation to evaluate pooling, ponding, and runoff. As maximum discharge on a daily basis will be 42,000 gallons, average daily discharge is expected to be much lower than this amount.

### Effluent Quality

Table I illustrates the quality of the expected effluent. Samples were collected from the pitting operation at a comparable facility, however, one major difference at the facility where samples were collected is that there is not an initial debrining elimination stage. This means that concentrations of some constituents, particularly chlorides, are higher than what is expected at Williamsburg Storage and Receiving. The samples were collected within a four-hour time period and were tested and measured against discharge standards provided in Rule 323.2222. The average value, standard deviation, standard error, and upper control limits are shown for each parameter tested, as described in "Guidesheet III, Characterization of Wastewater", provided by the Michigan Department of Environmental Quality. Results were calculated at a 95 percent confidence level.

The results indicate that all parameters tested are expected to be within the required discharge standards. The upper control limit for chloride concentration exceeds the groundwater application standard, however, since the process at Williamsburg will be recycling the effluent from the eliminator stage, where chloride concentrations are highest, a result lower than the standard is expected. Refer to Figure 1 for assumptions and calculations of expected discharge concentrations. These calculations show that the expected concentration at discharge would be 234 mg/l, below the 250 mg/l standard.

### Analysis of Alternatives

Rule 323.2217 requires certification that the applicant has identified and considered steps to avoid or minimize the use and discharge of pollutants authorized to be discharged. Recycling from the eliminators to the brine solution, utilization of a "dry" transport process, recycling internally at the pitters and destemmers, and utilization of the discharge to support and enhance existing cherry farms all contribute to minimization of waste. By utilizing the discharge on existing fields and cherry farms, waste disposal is also minimized at alternative waste treatment facilities.

### Recommendations

Based on the analytical results and the limited discharge rates, an exemption from permitting according to Rule 323.2210(y) should be granted. It is worth noting that a previous hydrogeological study has been conducted on the proposed discharge area, and based on this study, it was concluded that 94,000 gallons per day of brine solution would not have a detrimental impact on the land. Furthermore, the Right to Farm Act of Michigan allows a farmer to irrigate lands without additional permitting requirements.

Mr. Scott Ross  
Michigan Department of Environmental Quality

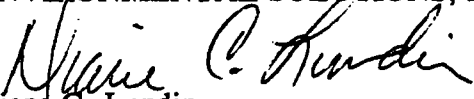
02/23/2000  
page 4

We trust that the information provided is sufficient to meet the requirements of the exemption. If necessary, assumptions for any of the testing parameters can be confirmed prior to discharge. We also understand that Rule 323.2210(y) requires public notice. Please let us know how we can assist you in processing this application, so that we may proceed with irrigation on the described land.

If you have any questions regarding the referenced information, please contact me at (231) 941-2025, extension 104.

Sincerely,

ENVIRONMENTAL SOLUTIONS, INC.

  
Diane C. Lundin  
Industrial Management Specialist

pc: Chris Hubbell  
Ed Roy  
Janice Heuer - Michigan Department of Environmental Quality

enc.

### **Figure 1: Chloride Concentration Estimates**

$F_{WF}$  = Total flow rate at Williamsburg: 6 Pitters @ 5 gallons/minute + 1 Destemmer @ 5 gallons/minute + 1 Debrining Eliminator @ 3 gallons/minute = 38 gallons per minute

Comparable to anonymous facility where samples were collected, however, at Williamsburg, the Debrining Eliminator flow is recycled to the brine. Concentration at the eliminator is higher than at the pitters and destemmers. From previous hydrogeology study conducted at Williamsburg, the concentration of chloride in brine solution is 4,000 mg/l. If we assume approximate dilution by  $\frac{1}{2}$  at the eliminator, the concentration would be 2,000 mg/l. Therefore,  $C_{DB}$  = Concentration at Debrining Eliminator = 2,000 mg/l

To calculate the estimated concentration at Williamsburg, the concentration at the Debrining Eliminator can be subtracted from overall results. Using one minute as a basis, the following formula can be utilized:

$$C_{WF} = \{(C_{AF} * F_{AF} * K_{GL}) - (C_{DB} * F_{DB} * K_{GL})\} / \{(F_{WDIS} * K_{GL})\}$$

Where:

- $C_{WF}$  = Chloride Concentration at Williamsburg Facility, mg/l
- $C_{AF}$  = Chloride Concentration at Anonymous Facility, UCL, mg/l
- $C_{DB}$  = Chloride Concentration at Debrining Eliminator, mg/l
- $F_{AF}$  = Flow at Anonymous Facility, assume comparable to Williamsburg total flow, gallons
- $F_{db}$  = Flow at Debrining Eliminator, gallons
- $F_{WDIS}$  = Maximum flow to be discharged at Williamsburg Facility
- $K_{GL}$  = Constant, Gallons to Liter conversion

Substituting into the equation:

$$C_{WF} = \{(374 \text{ mg/liter} * 38 \text{ gallons} * 3.8 \text{ liters/gallon}) - (2000 \text{ mg/liter} * 3 \text{ gallons} * 3.8 \text{ liters/gallon})\} / \{35 \text{ gallons} * 3.8 \text{ liters/gallon}\} = 234 \text{ mg/liter}$$

Utilizing this equation, the estimated concentration of chloride in the effluent at the Williamsburg facility is expected to be 234 mg/liter. Assumptions were: comparable flows at both facilities, dilution at debrining eliminator, which is recycled at Williamsburg, to 2000 mg/l (stronger brine concentration would make final value go up), and maximum flow discharge.

**TABLE 1 - PITTING TEST SAMPLE RESULTS**

<i>Analyte</i>	<i>Detection Limit</i>	<i>GW Rule Limit (ug/l)</i>	<i>AVG</i>	<i>STD DEV.</i>	<i>ERROR</i>	<i>UCL</i>
Sodium	1 mg/l	15,000	99.50	614.33	12.39	128.66
Chloride	1 mg/l	25,000	285.00	5633.33	37.53	373.30
Sulfate	2 mg/l	25,000	48.25	8.92	1.49	51.76
Phosphorous	.01 mg/l		2.78	0.22	0.23	3.32
Total Inorganic Nitrogen	.01 mg/l	5	3.13	0.06	0.13	3.42
Ammonia	.01 mg/l		1.25	0.07	0.13	1.56
Nitrate	.01 mg/l		1.83	0.00	0.03	1.88
Nitrite	.01 mg/l	0.5	0.03	0.00	0.00	0.03
Calcium	1 mg/l		212.50	1225.00	17.50	253.68
Iron	.02 mg/l	0.3	0.17	0.00	0.00	0.18
Magnesium	1 mg/l		22.00			22.00
Potassium	.1 mg/l		35.50	91.67	4.79	46.76
Bicarbonate	10 mg/l		92.25	13.58	1.84	96.59
Carbonate	10 mg/l					undetected
Fluoride			0.33	0.00	0.03	0.39
Hardness (Ca <sub>2</sub> CO <sub>3</sub> )	5 mg/l		617.50	8091.67	44.98	723.33
Conductivity	1.0 umhos/cm		1525.00	75833.33	137.69	1848.98
BOD	400 mg/l		1025.00	75833.33	137.69	1348.98
pH			6.52	0.17	0.20	7.00

Utilize "Test Methods for Evaluation of Solid Waste, Physical-Chemical Methods", SW-846, 3rd Edition, 9/86 as updated through 8/26/99 or "Guidelines Establishing Test Procedures for the Analysis of Pollutants," 40 CFR Part 136.

## GENERAL INFORMATION

Print or type clearly

1. DISCHARGE FACILITY NAME		Williamsburg Receiving and Storage, Inc.	
2. FACILITY OWNER NAME AND MAILING ADDRESS		Chris Hubbell	
Name			
Street Address or P.O. Box		10190 Munro Road	
City, State and Zip Code		Williamsburg, Mi 49690	
Telephone No.		(231)264-5260	
Fax No.		(231)264-8774	
3. CONTACT PERSON			
Name and Title		Chris Hubbell - Owner (President)	
Street Address or P.O. Box		10190 Munro Road	
City, State and Zip Code		Williamsburg, Michigan 49690	
Telephone No.		(231)264-5260	Fax No. (231)264-8774
4. DISCHARGE LOCATION			
Street Address		10190 Munro Road	
City		Williamsburg	State Michigan Zip Code 49690
County		Grand Traverse	Whitewater Township
Township		28N Range 9W	Section Number 9
First Quarter Section		Legal Description Attached	Second Quarter Section Additional Quarter Sections
Latitude		N 44° 44' 54" Longitude W 85° 24' 32"	
5. CERTIFIED OPERATOR (NOT REQUIRED FOR 2211(c), (d), (e), (g), (h), or 2213 (2), (3), (4))			
Name		David Cooper	Certification Number A1h
Street Address		Environmental Solutions, Inc. PO Box 2127	
City		Traverse City	State Michigan Zip Code 49685
Telephone No.		(231)941-2025	

# Certificate of Survey

## DESCRIPTIONS

Parcels of land situated in Whitewater Township, Grand Traverse County, Michigan, and more fully described as follows:

### PARCEL 1

That part of the Southwest 1/4 of Section 9, Town 28 North, Range 9 West, described as: Beginning at the Southwest corner of said Section 9; thence North 00°05'55" East along the West line of said section and centerline of Munro Road 1198.11 feet; thence South 89°47'38" East 207.28 feet; thence North 53°45'33" East 202.05 feet; thence South 89°47'38" East 125.65 feet; thence South 00°05'55" West 1316.82 feet to the South line of said section and centerline of Angell Road; thence North 89°56'50" West along said South section line and centerline 495.65 feet to the point of beginning, and containing 14.20 acres of land.


Subject to the rights of the public over the Southerly 33 feet thereof as occupied by Angell Road, and the Westerly 33 feet as occupied by Munro Road.

Also subject to easements, right-of-ways, reservations and restrictions of record.

### PARCEL 2

That part of the Southwest 1/4 of Section 9, Town 28 North, Range 9 West, described as: Commencing at the Southwest corner of said Section 9; thence South 89°56'50" East along the South line of said section and centerline of Angell Road 495.65 feet to the point of beginning; thence North 00°05'55" East 1316.82 feet; thence South 89°47'38" East 164.35 feet; thence South 00°05'54" West 502.53 feet; thence South 89°52'14" East 594.51 feet; thence South 00°06'22" West 155.66 feet; thence South 89°52'14" East 236.82 feet; thence South 00°09'03" West 657.08 feet to said South section line and centerline; thence North 89°56'50" West along said South section line and centerline 995.06 feet to the point of beginning, and containing 19.63 acres of land.

Subject to the rights of the public over the Southerly 33 feet thereof as occupied by Angell Road. Also subject to easements, right-of-ways, reservations and restrictions of record.

  
NEIL L. WAY  
Licensed Surveyor Number: 28432

<b>EAGLE LAND SURVEYING</b>  710 US-31 SOUTH P.O. BOX 836 ELK RAPIDS, MI 49629	(616) 264-9110 FAX: 264-9311	For: <b>CHRIS HUBBELL</b>
		Part of the SW 1/4 of Sec. 9, T28N, R9W, Whitewater Twp., Grand Traverse Co., Michigan.
	Date: 2 June 1999	File No.: 99-2086
FB/PG: 2042/68	Drafted By: SMM-1044	Sheet 2 of 3